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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

JEROME L. ELKIND

Serial No. 09/965,140 (TI-33085)

Filed September 26, 2001

For: POCKET ANALYSER

Art Unit 1743

Examiner Samuel P. Siefke

Customer No. 23494

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Sir:

## SUBSTITUTE BRIEF ON APPEAL

## REAL PARTY IN INTEREST

The real party in interest is Texas Instruments Incorporated, a Delaware corporation with offices at 7839 Churchill Way, Dallas, Texas 75251.

## RELATED APPEALS AND INTERFERENCES

There are no known related appeals and/or interferences.

## STATUS OF CLAIMS

This is an appeal of claims 14 to 18, 20 to 24, 26 to 28, 32 and 36 to 41, all of the rejected claims. Claims 19, 25, 29 to 31, 33 to 35 and 42 to 44 have been merely been objected to. Claims 1 to 13 have been canceled Please charge any costs to Deposit Account No. 20-0668.

## STATUS OF AMENDMENTS

An amendment was not filed after a second or subsequent rejection.

## SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention, as shown in Fig. 3, relates to a portable analyzer 150 for detecting properties of a given sample analyze having an agitated well/fluid chamber 155 and a micro/miniature vibrator 175 to agitate the well/fluid chamber 155 and its associated biosensor 100 to enhance both mixing and mass transport of the analyte 25 (shown in Fig. 1) to the sensor 100 surface without the need for microfluidic channels, pumps or valves. The analyzer includes a biosensor 100 having a sensor surface which detects properties of a given sample analyte at the sensor surface. A fluid compartment 155 for retaining therein an analyte, is in fluid communication with the sensor surface. The analyzer also includes a miniature electro-mechanical vibration device 175 configured to vigorously shake the fluid compartment to enhance mass transport of the given sample analyte to the sensor surface for the detection of properties of the given sample analyte.

The miniature electro-mechanical vibration device can be further configured to vigorously agitate the contents of the fluid compartment and can be configured to receive a liquid sample having an analyte suspended or dissolved therein and the vibration device can be configured to vigorously agitate the fluid compartment to cause an analyte suspended or dissolved in the liquid sample to accelerate the mass transport of analyte beyond that available in the absence of agitation. The biosensor and be an optically based miniaturized sensor and the fluid compartment can incluced a fluid chamber and a lid configured to open and close such that a liquid or solid

sample having a first analyte suspended therein can be sealed within the chamber. The lid can include a second analyte embedded therein such that agitation of the fluid compartment causes the second analyte to mix with the liquid or solid sample sealed within the chamber.

## GROUNDS OF REJECTION

1. Whether claims 14 to 18, 20 to 24, 26 to 28, 32 and 36 are anticipated by Yalvac et al. (U.S. 5,310526) under 35 U.S.C. 102(b).

2. Whether claims 37 to 41 are patentable over Valvac et al. in view of Sunshine (U.S. 6.085,5786).

## ARGUMENT

The invention relates to a *portable* analyzer and the structure as claimed is designed specifically for such a device. The principal reference cited is clearly not a portable device. This deficiency of the principal reference applies to all of the claims and both rejections.

## ISSUE 1

Claims 14 to 18, 20 to 24, 26 to 28, 32 and 36 were rejected as being anticipated by Yalvac et al. (U.S. 5,310526) under 35 U.S.C. 102(b). The rejection is without merit.

In addition to the fact that the claims specifically call for a portable device, a feature not shown by Yalvac et al., claim 14 requires that the fluid compartment be in fluid communication with the sensor surface. No such feature is taught or suggested by Yalvac et al. Note that in Yalvac et al. the detector 39 is remote from the fluid compartment and is coupled to the fluid compartment by the optical fiber 41. Not only does this fail to read on claim 14, but, in addition, this feature completely defeats the purpose of the present invention, namely to provide a portable analyzer. In

addition, it is a purpose of the present invention to direct the analyte to the biosensor surface. This is not the case in Yalvac et al. where as can best be determined, the sample and reagent enter the chamber along two different paths which meet in the chamber and the combined reagent and sample and then discharged through vent passageway 16. There is no attempt to direct the combined reagent and sample toward any biosurface. In fact, there is no attempt to direct the combined reagent and sample toward the optical glass window 36, but rather out of the vent passageway 16. It is fundamental that for a rejection under section 102 to be proper, each and every feature of the claim and each and every function of those claimed features must be present in a single reference. Clearly this is not the case with Yalvac et al.

The above argument applies as well to all of the independent claims which include claims 20, 26 as well as dependent claims 15 to 18, 21 to 24, 27, 28, 32 and 36..

Claims 18, 19, 24 and 25 further require a lid, this feature being essential in a portable device. No such feature is taught or even remotely suggested by Yalvac et al.

**ISSUE 2**

Claims 37 to 41 were rejected under 35 U.S.C. 103(s)as being unpatentable over Yalvac et al. in view of Sunshine. The rejection is without merit.

To begin with, these claims depend from claim 26 and therefore define patentably over the cited references since Sunshine fails to overcome the deficiencies in Yalvac et al. as demonstrated above.

In addition, Sunshine relates to vapor sensors and is from an entirely different field of endeavor. Accordingly, even were Sunshine to show the additional features claimed in these

claims, there is still not teaching or suggestion to combine the references other that from the subject disclosure.

## CONCLUSIONS

For the reasons stated above, reversal of the final rejection and allowance of the claims on appeal is requested that justice be done in the premises.

Respectfully submitted,

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## CLAIMS APPENDIX

The claims on appeal read as follows:

14. A portable analyzer for detecting properties of a given sample analyte comprising:

a biosensor having a sensor surface, said biosensor detecting properties of a given sample analyte at said sensor surface;

a fluid compartment for retaining therein an analyte, said fluid compartment in fluid communication with the sensor surface; and

a miniature electro-mechanical vibration device configured to vigorously shake the fluid compartment to enhance mass transport of said given sample analyte to the sensor surface for the detection of properties of said given sample analyte.

15. The portable analyzer according to Claim 14 wherein the miniature electro-mechanical vibration device is further configured to vigorously agitate the contents of the fluid compartment.

16. The portable analyzer according to Claim 14 wherein the fluid compartment is configured to receive a liquid sample having an analyte suspended or dissolved therein, and further wherein the vibration device is configured to vigorously agitate the fluid compartment to cause an analyte suspended or dissolved in the liquid sample to accelerate the mass transport of analyte beyond that available in the absence of agitation.

17. The portable analyzer according to Claim 14 wherein the biosensor comprises an optically based miniaturized sensor.

18. The portable analyzer according to Claim 14 wherein the fluid compartment comprises:

a fluid chamber; and

a lid configured to open and close such that a liquid or solid sample having a first analyte suspended therein can be sealed within the chamber.

19. The portable analyzer according to Claim 18 wherein the lid comprises a second analyte embedded therein such that agitation of the fluid compartment causes the second analyte to mix with the liquid or solid sample sealed within the chamber.

20. A portable analyzer for detecting properties of a given sample analyte comprising:

a biosensor having a sensor surface, said biosensor detecting properties of a given sample analyte at said sensor surface;

a fluid compartment for retaining therein an analyte, said fluid compartment in fluid communication with the sensor surface; and

a miniature electro-mechanical vibration device configured to vigorously shake the biosensor to enhance mass transport of analyte to the sensor surface for detection of properties of said given sample analyte at said sensor surface..

21. The portable analyzer according to Claim 20 wherein the miniature electro-mechanical vibration device is further configured to vigorously shake the fluid compartment.

22. The portable analyzer according to Claim 20 wherein the fluid compartment is configured to receive a liquid sample having an analyte suspended or dissolved therein, and further wherein the vibration device is configured to vigorously shake the fluid compartment to cause the analyte suspended or dissolved in the liquid sample to accelerate the mass transport of analyte beyond that available in the absence of agitation.

23. The portable analyzer according to Claim 20 wherein the biosensor comprises an optically based miniaturized sensor.

24. The portable analyzer according to Claim 20 wherein the fluid compartment comprises:

a fluid chamber; and

a lid configured to open and close access to the fluid chamber such that a liquid or solid sample having a first analyte suspended therein can be sealed within the chamber.

25. The portable analyzer according to Claim 24 wherein the lid comprises a second analyte embedded therein such that agitation of the fluid compartment causes the second analyte to mix with the liquid or solid sample sealed within the chamber.

26. A portable analyzer for detecting properties of a given sample analyte comprising:

a biosensor having a sensing surface, said biosensor detecting properties of a given sample analyte at said sensor surface;

a sample compartment configured to receive a sample having an analyte suspended therein in fluid communication with said ~~bio~~sensor surface; and

a miniature electro-mechanical vibration device configured to vigorously shake the sample compartment to cause a desired portion of the analyte to contact the sensing surface of the biosensor surface for the detection of properties of said given sample analyte at said sensor surface..

27. The portable analyzer according to Claim 26 wherein the biosensor comprises an optically based miniaturized sensor.

28. The portable analyzer according to Claim 26 further comprising a sealing element configured to selectively seal the sample compartment.

29. The portable analyzer according to Claim 28 wherein the sealing element comprises a septum.

30. The portable analyzer according to Claim 28 wherein the sealing element comprises a removable cap.

31. The portable analyzer according to Claim 28 wherein the sealing element comprises a hinged cap.

32. The portable analyzer according to Claim 26 wherein the sample comprises at least one form selected from the group consisting of a liquid and a solid.

33. The portable analyzer according to Claim 26 further comprising at least one secondary reagent associated with the sample chamber such that the shaking of the sample compartment will cause analyte from a sample contained therein to mix with the secondary reagent.

34. The portable analyzer according to Claim 33 wherein the secondary reagent is embedded in the sample chamber.

35. The portable analyzer according to Claim 33 wherein the secondary reagent is embedded in the sealing element.

36. The portable analyzer according to Claim 26 wherein the sample compartment is configured to receive a liquid sample having an analyte suspended or dissolved therein, and further wherein the vibration device is configured to vigorously shake the sample compartment to cause the analyte suspended or dissolved in the liquid sample to accelerate the mass transport of analyte beyond that available in the absence of agitation.

37. The portable analyzer according to Claim 26 further comprising:

a data processing device;

a data input device in communication with the data processing device;

an algorithmic software directing the data processing device; and

a data storage unit, wherein discrete analyte data associated with a sample contained within the sample compartment is stored and supplied to the data processing device such that the data processing device, directed by the algorithmic software, will automatically determine bioanalytical data associated with the sample, wherein predetermined parameters associated with the bioanalytical data are determined via the data input device.

38. The portable analyzer according to Claim 37 wherein the data processing device is a digital signal processor.

39. The portable analyzer according to Claim 37 wherein the data input device is a keypad.

40. The portable analyzer according to Claim 26 further comprising means for transmitting and receiving data via a wireless communications link.

41. The portable analyzer according to Claim 40 wherein the means for transmitting and receiving data comprises a radio frequency receiver and a radio frequency transmitter.

42. The portable analyzer according to claim 14 wherein said biosensor is a surface plasmon resonance sensor.

43. The portable analyzer according to claim 20 wherein said biosensor is a surface plasmon resonance sensor.

44. The portable analyzer according to claim 26 wherein said biosensor is a surface plasmon resonance sensor.

## EVIDENCE APPENDIX

Not applicable

## RELATED PROCEEDINGS APPENDIX

Not applicable